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10/579,880	03/30/2007	Mikio Hasegawa	135292-0001	5964

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EXAMINER	
NICKERSON, JEFFREY L	
ART UNIT	PAPER NUMBER
2442	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/579,880	HASEGAWA ET AL.	
	Examiner	Art Unit	
	JEFFREY NICKERSON	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Application No. 10/579,880 filed nationally on 30 March 2007 and internationally on 19 November 2004. The request for continued examination presented on 22 October 2009, which amends claims 1-2, 7-9, and 16, provides replacement drawings, and presents arguments, is hereby acknowledged. Claims 1-16 are currently pending and have been examined.

Drawings

2. The replacement drawings filed 23 July 2009 are accepted. All outstanding objections to the drawings are hereby withdrawn.

Claim Objections

3. The RCE presented on 22 October 2009 amending the claims is noted. All outstanding objections to the claims are hereby withdrawn.

35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Response to Arguments

5. The RCE presented on 22 October 2009 amending the claims is noted. All outstanding rejections under 35 USC 112, second paragraph, are hereby withdrawn.

35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Response to Arguments

7. Applicant's arguments with respect to the 35 USC 103(a) rejections have been considered but are moot in view of the new grounds of rejection, which are found below.

Claim Rejections

8. Claims 1-4, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2004/0039462 A1), and in further view of Srikantan et al (US 7,051,337).

Regarding claim 1, Chen teaches an analog input system that uses an analog signal input terminal (Chen: Figure 2, item 28 depicts analog mic input terminal as an option) to convert an analog signal into a digital signal and send the converted digital signal to a host computer via a network (Chen: Figure 3 depicts the sound card for receiving digital signals; Figure 7 depicts the wireless mic; Figure 6 depicts a device that handles both input and output analog processing; See also [0021] and abstract), wherein

the analog signal input terminal (Chen: Figure 7, item 29 depicts the mic adapter) comprises:

an analog signal input unit (Chen: Figure 7, item 80 depicts the analog input port);

an A/D converter for converting the analog signal into a digital signal (Chen: Figure 7, item 82);

a network controller for controlling data transmission and reception (Chen: Figure 7, item 86);

a terminal-side connection establishing unit for establishing two connections with the host computer, these being an inbound connection and an outbound connection (Chen: Figure 7, items 85 and 86; Figure 6, items 78 and 74; See also [0027] which provides for bidirectional communication between the device and the host sound card);

a control signal processing unit for receiving control signals from the host computer (Chen: [0027] provides for receiving control signals from the host computer);

a signal transmitting unit for sending digital signals (Chen: Figure 7, items 85 and 86; Figure 6, items 75 and 78; See also [0027]); and wherein

the host computer comprises at least:

a network adapter for controlling data transmission and reception (Chen: Figure 3, items 46 and 40);

a host-side connection establishing unit for establishing two connections, that is, an inbound connection and an outbound connection to and from the analog signal input terminal (Chen: Figure 3, item 46 depicts a transceiver which inherently transmits and

receives; Figure 6 and [0027] provide the remote device can handle inbound and outbound data, providing the host can as well);

a control signal processing unit for sending control signals (Chen: Figure 3, items 44 and 48);

an application processing unit for executing an application and allowing the application to use the said digital signals (Figure 3, items 24 and 30; See also [0018]).

Chen does not teach wherein the connections are Internet protocol socket connections;

wherein the inbound socket connection is for receiving control signals from the host computer;

wherein the outbound socket connection is an independent socket connection for sending digital signals to the host computer;

wherein the control signals are related to at least a start request and a stop request;

wherein the digital signals are transmitted based on received control signals; or

wherein the host computer has an IP connection disconnecting unit for disconnecting the inbound socket connection and the outbound socket connection.

Srikantan, in a similar field of endeavor, teaches wherein the connections are Internet protocol socket connections (Srikantan: Figure 2; col 5, lines 48-55);

wherein the inbound socket connection is for receiving control signals from the host computer (Srikantan: col 5, lines 19-37; col 6, lines 47-58; claim 1 "*for each of the*

multiple clients, a separate control socket configured to receive media stream command events..”; provides for separate control socket connection);

wherein the outbound socket connection is an independent socket connection for sending digital signals to the host computer (Srikantan: col 6, lines 47-58; claim 1 *“a single delivery socket configured to stream the media.."*; provides for separate delivery socket connection);

wherein the control signals are related to at least a start request and a stop request (Srikantan: col 5, lines 19-47 for commands);

wherein the digital signals are transmitted based on received control signals (Srinkantan: col 5, lines 17-47); and

wherein the host computer has an IP connection disconnecting unit for disconnecting the inbound socket connection and the outbound socket connection (Srikantan: col 5, lines 38-47 for teardown closing sockets).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Srikantan for using separate sockets for control commands and streaming data. The teachings of Srikantan, when implemented in the Chen system, will allow one of ordinary skill in the art to control processing and transmission of multiple remote devices. One of ordinary skill in the art would be motivated to utilize the teachings of Srikantan in the Chen system in order to efficiently manage network connections in a scalable manner.

Regarding claim 2, the Chen/Srikantan system teaches wherein:

the terminal-side IP connection establishing unit in the analog signal input terminal establishes an inbound socket connection from the host computer when the terminal-side IP connection establishing unit detects an outbound socket connection from the host computer (Srikantan: col 8, line 63 - col 9, line 3 for listener); and

the host-side IP connection establishing unit in the host computer establishes an outbound socket connection to the analog signal input terminal (This is a limitation in claim 1; Same rejection rationale applies).

Regarding claim 3, the Chen/Srikantan system teaches wherein the analog signal input terminal is provided with a microphone, an output signal from which is input into the analog signal input unit (Chen: Figure 7, item 28 into item 80).

Regarding claim 4, the Chen/Srikantan system teaches wherein the network is a wireless communication network (Chen: abstract); and

wherein the network controller and network adapter are compatible with the wireless communication network (Chen: abstract; Figure 2).

Regarding claim 7, this claim comprises limitations found within claim 1 and the same rationale of rejection is used, where applicable, and wherein:

the system is an analog output system in which a digital signal is sent from a host computer to an analog signal output terminal through a network and the analog signal output terminal converts the digital signal into an analog signal and then outputs the

analog signal (Chen: Figure 5), wherein the analog signal output terminal comprises at least:

a signal receiving unit for receiving digital signals according to the control signals (Chen: Figure 5, items 150 and 154);

a D/A converter for converting the digital signals into analog signals (Chen: Figure 5, items 158);

an output unit for outputting the analog signals (Chen: Figure 5, items 160 and 164); and wherein the host computer comprises at least:

a signal transmitting unit for sending the generated digital signal (Chen: Figure 3, item 46).

Regarding claim 8, this analog signal output system claim comprises limitations corresponding to those found within claim 2 and the same rationale of rejection is used, where applicable.

Regarding claim 10, the Chen/Srikantan system teaches wherein a speaker is provided on the analog signal output terminal (Chen: abstract; Figure 2); and

wherein an output signal from the output unit is generated as voice from the speaker (Chen: abstract; Figure 2).

Regarding claim 11, this analog signal output system claim comprises limitations corresponding to those found within claim 4 and the same rationale of rejection is used, where applicable.

Regarding claim 16, the Chen/Srikantan system teaches wherein a remote operation terminal for remotely operating an output mode from the analog signal output terminal is provided on the network (Srikantan: col 5, lines 19-47 for remote control; col 6, lines 47-58 provide for multiple clients);

wherein the host computer and remote operation terminal are interconnected through an operation socket that is different from the inbound socket and the outbound socket (Srikantan: col 5, lines 47-58; claim 1 provide each client has at least their own control socket);

when the remote operation terminal sends a remote operation signal to the host computer, the network adapter in the host computer receives the remote operation signal and then the control signal processing unit sends a control signal according to the remote operation signal (Srikantan: col 5, lines 19-47).

9. Claims 5-6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2004/0039462 A1), in view of Srikantan (US 7,051,337), and in further view of Yamauchi (US 5,896,099) and Official Notice (ON).

Regarding claim 5, the Chen/Srikantan system does not teach wherein the network uses the UDP to include an IP packet, at the time of the IP connection, in a UDP packet;

wherein a header field is in the UDP protocol for transmission; or

wherein characteristic information data related to the signal contents of the digital signal retrieved is included in a header field.

Yamauchi, in a similar field of endeavor, teaches wherein characteristic information data related to the signal contents of the digital signal retrieved is included in a header field (Yamauchi: col 2, lines 47-65 provide for headers with sampling rates).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Yamauchi for inserting metadata information into the header. The teachings of Yamauchi, when implemented in the Chen/Srikantan system, will allow one of ordinary skill in the art to insert metadata into the optional fields of a media packet. One of ordinary skill in the art would be motivated to utilize the teachings of Yamauchi in the Chen/Srikantan system in order to easily identify how to decode the information.

The Chen/Srikantan/Yamauchi system does not teach wherein the network uses the UDP to include an IP packet, at the time of the IP connection, in a UDP packet; or

wherein a header field is in the UDP protocol for transmission.

An Official Notice (ON) is taken that such use of UDP and encapsulating IP in UDP using header fields in UDP packets as a form of packetizing for network transmission was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for protocol manipulation. These known teachings, when implemented in the Chen/Srikantan/Yamauchi system, will allow one of ordinary skill in the art to use UDP as a transport protocol. One of ordinary skill in the art would be motivated to utilize these known teachings in the Chen/Srikantan/Yamauchi system in order to enable practicing the invention.

Regarding claim 6, the Chen/Srikantan/Yamauchi/ON system teaches wherein the analog signal is a voice signal (Yamauchi: col 3, lines 08-21); and

wherein the characteristic information data is at least any one of a voice level, a sampling rate, and the number of bits per sample (Yamauchi: col 2, lines 47-65).

Regarding claim 12, this analog signal output system claim contains limitations corresponding to that of claim 5, and the same rationale of rejection is used, where applicable.

Regarding claim 13, this analog signal output system claim contains limitations corresponding to that of claim 6, and the same rationale of rejection is used, where applicable.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2004/0039462 A1), in view of Srikantan (US 7,051,337), and in further view of Poon et

al ("Performance of buffer-based request-reply scheme for VoD streams over IP networks", 2000).

Regarding claim 9, the Chen/Srikantan system does not teach wherein the analog signal output terminal has a buffer area and a data requesting unit, the data requesting unit sending a data transmission request signal according to a storage capacity of the buffer area; or

wherein the signal transmitting unit in the host computer sends a digital signal according to the transmission request signal.

Poon, in a similar field of endeavor teaches wherein the analog signal output terminal has a buffer area and a data requesting unit, the data requesting unit sending a data transmission request signal according to a storage capacity of the buffer area (Poon: pg 230, section 2); and

wherein the signal transmitting unit in the host computer sends a digital signal according to the transmission request signal (Poon: pg 230, section 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Poon for using a buffer-based client pull method. The teachings of Poon, when implemented in the Chen/Srikantan system, will allow one of ordinary skill in the art to control the amount and rate of content being sent to the remote devices from the host computer. One of ordinary skill in the art would be motivated to utilize the teachings of Poon in the Chen/Srikantan system in order to

prevent receiver buffer overflow or underflow, which would result in corrupt data or delay in media playback.

11. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2004/0039462 A1), in view of Srikantan (US 7,051,337), and in further view of Zdepski et al ("Statistically Based Buffer Control Policies for Constant Rate Transmission of Compressed Digital Video", June 1991) and Jo et al ("Synchronized one-to-many media streaming with adaptive playout control", 10 December 2002).

Regarding claim 14, the Chen/Srikantan system teaches wherein a signal converter is a D/A converter (Chen: Fig. 3, item 47); and

wherein the output unit outputs analog signals (Chen: abstract).

The Chen/Srikantan system does not teach wherein the analog signal output terminal further comprises:

a buffer with a prescribed capacity, which is used to store digital signals received by the signal receiving unit;

at least a monitoring unit for monitoring an amount of digital signals stored in the buffer or a remaining capacity of the buffer; and

a synchronization control unit for changing a sampling clock in the converter according to either the amount of digital signals stored or the remaining capacity; and

wherein the played-back signals are synchronized.

Zdepski, in a similar field of endeavor, teaches further comprising:

a buffer with a prescribed capacity, which is used to store digital signals received by the signal receiving unit (Zdepski: abstract provides choosing a mode based on various criterion; pg 952, RHS #2; See also Fig. 8);

at least a monitoring unit for monitoring an amount of digital signals stored in the buffer or a remaining capacity of the buffer (Zdepski: pg 952, RHS #2; Fig. 8; pg 949, Fig 4, adaptive rate control unit); and

a synchronization control unit for changing a sampling clock in the converter according to either the amount of digital signals stored or the remaining capacity (Zdepski: pg 949, Fig 4, adaptive rate control unit; pg 949, LHS).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Zdepski for using a variable sampling rate signal converter based on buffer occupancy. The teachings of Zdepski, when implemented in the Chen/Srikantan system, will allow one of ordinary skill in the art to adjust the sampling rates of DACs based on receiver buffer occupancy. One of ordinary skill in the art would be motivated to utilize the teachings of Zdepski in the Chen/Srikantan system in order to prevent buffer over- or underflow, thereby optimizing system resources.

The Chen/Srikantan/Zdepski system does not teach wherein the output unit outputs synchronized analog signals.

Jo, in a similar field of endeavor, teaches wherein the played-back signals are synchronized (Jo: abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Jo for synchronizing playback of audio. The teachings of Jo, when implemented in the Chen/Srikantan/Zdepski system, will allow one of ordinary skill in the art to synchronize playback of multiple analog signals. One of ordinary skill in the art would be motivated to utilize the teachings of Jo in the Chen/Srikantan/Zdepski system in order to ensure the end-user does not experience perceive timing differences between signals.

Regarding claim 15, the Chen/Srikantan/Zdepski/Jo system teaches wherein the analog output system has two or more analog signal output terminals for one host computer (Chen: Figure 1; Figure 2 both FL and FR speakers); wherein two or more types of voice data, including right and left stereo channel voice data, are output to each analog signal output terminal (Chen: Figure 2, items 34; [0004]); and wherein the voice outputs from the two or more analog signal output terminals are mutually synchronized by a function of the synchronization control unit (Jo: abstract).

Citation of Pertinent Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Minnig et al (US 6,981,278 B1) discloses a system that utilizes separate control and data sockets.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY NICKERSON whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 9:00am - 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571)272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N./
Examiner, Art Unit 2442

/Asad M Nawaz/
Primary Examiner, Art Unit 2455